Continental and Amazon Web Services accelerate Automotive-Software Development

Virtual Electronic Control Unit (vECU) shortens development time up to twelve months and helps automakers identify issues earlier in the development cycle

- vECU Creator will enable automotive software developers to create virtual ECUs to simulate applications and ECU system performance before hardware is finalized

- Solution to be powered by Elektrobit's production-proven software for Classic and Adaptive AUTOSAR environments

- New solution will drive development for software-defined vehicles from conceptualization to real-world application

Frankfurt, Germany, August 17, 2023. Continental has expanded its tool box for automotive software development: With the future virtual ECU Creator software (vECU Creator), developers at vehicle manufacturers, suppliers and third parties will be able to configure and run virtual cloud-based electronic control units in their specific development environments to help develop code for micro-controller and processor hardware that does not yet exist. The virtual ECU Creator is part of the Continental Automotive Edge (CAEdge) framework, which runs on Amazon Web Services (AWS). By using cloud-based vECUs, new applications or software features for software-defined vehicles (SDV) can be built by OEMs faster, more efficiently and in a more agile way. That allows future developments to be tested and debugged continuously by engineers within the cloud, at the same time as hardware development and production cycles. The virtual ECU Creator brings together Continental's high-performance computers, and Electronic Control Units, with Elektrobit's production-proven software for Classic and Adaptive AUTOSAR.

A great vehicle relies on both quality hardware and software.

Our virtual ECU Creator will make it easy for our software experts to work in parallel, enabling us to create applications for the software-defined vehicle that enhance the driver's safety and experience,

said Gilles Mabire, CTO at Continental Automotive.

Development from virtual to real

In times when car manufacturers are looking to bring new car models much faster to market and want to continuously provide software updates to customers, traditional hardware-in-the-loop-based development (HiL) and testing of automotive software is slow and limited in scale. Most of the functional, safety and security issues, can only be addressed when the physical ECUs are available. Until now, there were no comprehensive tools for developers at automotive manufacturers and system suppliers to simulate, in the cloud, the performance of digital features and confirm compatibility across existing or new car lines prior to general hardware availability, leading to increased risk prior to launch. According to industry statistics fixing issues in late stages can be 10 times or more expensive.

Bringing together Continental's proven track record in design and manufacturing of complex automotive systems at scale and Elektrobit's mass market ready automotive base software and middleware, the virtual ECU Creator marks the next step in future system development in the automotive industry.

Automotive software developers will be able to use the virtual ECU Creator to help decouple hardware and software decisions, simulate digital feature performance on the digital twin of hardware subsystems and continuously release applications that customize and enhance the driver experience. With the virtual ECU Creator, CAEdge users can configure their vECU choosing from a range of virtualized hardware and software for base tooling and simulation, covering typical microcontroller-based ECUs, Zone Controllers or High-Performance Computers.

After selecting the target chipset and middleware, a vECU is automatically set up in the user's development environment based on their CAEdge preferences, allowing developers to begin coding immediately.

Elektrobit's Classic and Adaptive AUTOSAR product lines are pre-integrated in the virtual ECU Creator and help enable a highly automated approach to integrate software, upgrade components, and test and validate new builds without the need of the target hardware. Scaling vECUs for verification and validation is easy and on-demand, and time for test runs can be reduced significantly, decreasing overall time-to-market.

Continental and AWS have been collaborating since 2021. AWS is Continental's preferred cloud provider for vECU Creator and its services help support Continental Automotive Edge framework (CAEdge) – a modular hardware and software framework developed by Continental that connects the vehicle to the cloud and features a virtual workbench offering numerous options to help automakers develop, supply and maintain software-intensive system functions. This allows drivers to integrate the functions they want going forward during the entire service life of their vehicle by downloading quick and convenient software updates.

> Offering Continental's vECU Creator on AWS will fundamentally change the automotive design process, which, for years, presented the challenge of developing vehicle software when physical hardware may not yet exist," said Wendy Bauer, General Manager of Automotive and Manufacturing at AWS. "Extending our work with Continental through virtual ECUs and the vECU Creator offerings directly addresses a significant industry issue and democratizes the development process between automakers and their suppliers. Now, with the parity that vECU provides in the cloud, automakers can accelerate their development and increase testing efficiency earlier in the cycle.

Media Spokesperson and Topic Manager Software and Central Technologies

Press release distributed by Wire Association on behalf of Continental AG, on Aug 16, 2023. For more information subscribe and [follow](#) *us.*

Media Assets

Embedded Media

Visit the [online press release](#) to interact with the embedded media.

https://wireassociation.eu/newsroom/continental-ag/releases/en/continental-and-amazon-web-services-accelerate-automotive-software-development-1320

Continental AG

Newsroom: https://wireassociation.eu/newsroom/continental-ag
Website: https://www.continental.com/
Primary Email: silke.bernhardt@conti.de

Social Media

Facebook - https://www.facebook.com/Continental

Twitter - https://twitter.com/Conti_Press

Youtube - https://www.youtube.com/c/ContinentalCorporation

Instagram - https://www.instagram.com/continental_career/

Linkedin - https://www.linkedin.com/company/continental

Glassdoor - https://www.glassdoor.com/Overview/Working-at-Continental-EI_IE3768.11,22.htm

---